

## CLAIM(S)

1. Process for detecting the state of a catalyst system, where the catalyst system is installed in an exhaust gas channel of an internal combustion engine of a motor vehicle, through which catalyst system exhaust gas from the internal combustion engine flows so that it can be purified, characterized in that

(a) at least one operating parameter of the catalyst system is detected over a predetermined time period;

(b) the total energy output of the internal combustion engine within the predetermined time period is determined; and

(c) a characteristic value ( $k$ ) is calculated on the basis of a ratio of the at least one operating parameter to the total energy output.

2. Process according to Claim 1, characterized in that an average characteristic value ( $k_m$ ) is formed from a predetermined number  $n$  of characteristic values ( $k$ ).

3. Process according to Claim 1 or Claim 2, characterized in that a maintenance signal is generated as a function of the characteristic value ( $k$ ) or of the average characteristic value ( $k_m$ ).

4. Process according to Claim 3, characterized in that a maintenance signal is generated when the characteristic value ( $k$ ) or the average characteristic value ( $k_m$ ) exceeds a predetermined threshold value.

5. Process according to one of the preceding claims, characterized in that the total energy output is found on the basis of a power-equivalent variable, especially a cumulative air quantity.

6. Process according to one of the preceding claims, characterized in that the operating parameters of the catalyst system comprise a catalyst temperature and the amount of HCs, CO, O<sub>2</sub>, or NO<sub>x</sub> in the exhaust gas.

7. Process according to one of the preceding claims, characterized in that the predetermined time period occurs within an acceleration phase of the motor vehicle.

8. Process according to one of the preceding claims, characterized in that the detection of state is conducted within a predetermined lambda region and/or in a predetermined temperature range.

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